

Appl. No. 10/620,928
Amdt. Dated August 6, 2004
Office Action Date April 6, 2004

• • R E M A R K S / A R G U M E N T S • •

The Official Action of April 6, 2004 has been thoroughly studied. Accordingly, the changes presented herein for the application, considered together with the following remarks are believed to be sufficient to place the application into condition for allowance.

By the present amendment, the specification has been changed on pages 4 and 8 to correct typographical errors as suggested by the Examiner.

In addition, claim 3 has been changed to recite that the acrylic elastomer composition comprises a butenedioic acid monoalkyl ester-copolymerized acrylic elastomer comprising at least one kind of alkyl acrylate and alkoxyalkyl acrylate unit, butenedioic acid monoalkyl ester unit and 0 - 30% by weight of vinyl or olefin monomer unit, and a cross-linking agent, wherein the acrylic elastomer contains 0.1-30% by mole of unreacted butenedioic acid monoalkyl ester on the basis of carboxyl groups copolymerized in the acrylic elastomer.

Support for this change to claim 3 can be found on page 3 of applicants' specification.

Also by the present amendment, claims 4 and 5 have been changed in response to the Examiner's comments on pages 2 and 3 of the Official Action.

Entry of the changes to the specification and claims is respectfully requested.

Claims 3-5 are pending in this application.

The objection to claim 4 and rejection of claim 5 under 35 U.S.C. §112, second paragraph are believed to be addressed and overcome by the amendments made to these claims.

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Claims 3 and 4 stand rejected under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 3,883,472 to Greene et al.

Claim 3 stands rejected under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 3,904,588 to Greene.

Claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Greene in combination with Greene et al.

Claim 3 stands rejected under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 4,782,110 to Wolfe, Jr., optionally in view of Greene.

Claims 3-5 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 6,015,860 to Kuzumaki et al.

Claims 3-5 stand rejected under 35 U.S.C. §103(a) as being obvious over Kuzumaki et al.

Claims 3 and 5 stand rejected under 35 U.S.C. §102(e) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being obvious over Kuzumaki et al.

Claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kuzumaki et al.

For the reasons set forth below, it is submitted that all the pending claims are allowable over the prior art of record and therefore, each of the outstanding rejections of the claims should properly be withdrawn.

Favorable reconsideration by the Examiner is earnestly solicited.

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In response to the Examiner's reliance upon U.S. Patent No. 6,015,860 applicants are herewith submitting a Terminal Disclaimer in which the terminal portion of any patent issuing on the present application which would extend beyond the term of U.S. Patent No. 6,015,860 is disclaimed.

Inasmuch as the terminal disclaimer establishes that the present application and U.S. Patent No. 6,025,860 were commonly assigned at the time the invention was made, it is submitted that U.S. Patent No. 6,025,860 is not available as a reference against the present application.

Before addressing Green, Green et al. and Wolfe, Jr., applicants note that the acrylic elastomer composition set forth in independent claim 1 has distinguishing vulcanization and stability properties as demonstrated by good compression set characteristics. These properties enable the acrylic elastomer composition to be particular useful and effective for sealing elements such as gaskets, O-rings, packings, oil seals, hose seals, etc.

None of the prior art references relied upon by the Examiner, including Kuzumaki et al., teach or suggest applicants' claimed composition or the distinguishing vulcanization and stability properties thereof which are achieved by the composition containing "0.1-30% by mole of unreacted butenedioic acid monoalkyl ester on the basis of carboxyl groups copolymerized in the acrylic elastomer."

U.S. Patent No. 3,883,472 to Greene et al. is directed to "fast curing, scorch and heat resistant polymeric compositions" that contain "an acrylic ester/butenedioic acid monoester dipolymer or ethylenic/acrylic ester/butenedioic acid monoester terpolymer," a curing agent and an accelerator.

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In each of the Examples of Greene et al. only ethylene/acrylic ester/butenedioic acid monoester terpolymer having more than 43% of ethylene is used (note Examples 1A-15B and Tables 1 and 2 of Greene et al.).

Almost all of the compression set values in these Examples are poor and the oil swell values are large.

Therefore, one skilled in the art can easily recognize that the compositions of Greene et al. are not useful for products such as gaskets, O-rings, packings, oil seals, hose seals, etc. because such products require compression set characteristics and oil swell values that are small.

As one skilled in the art would realize, the differences in properties and characteristics between applicants' claimed compositions and those of Green et al. are directly associated with the components which distinguish applicants' invention over Greene et al.

U.S. Patent No. 3,904,588 to Greene is directed to elastomer compositions that have "particularly desirable resistance to oil and low pressures."

In the Examples of Greene only ethylene/acrylic ester/butenedioic acid monoester terpolymer having more than 31% ethylene content is used (see Table 1). There are no compression set characteristics provided in the Examples of Greene.

U.S. Patent No. 4,782,110 to Wolfe, Jr. is directed to a "thermoplastic composition having excellent oil swell resistance and tensile strength....adequate percent elongation, compression set resistance..."

The thermoplastic composition of Wolfe, Jr. comprises a blend of crystalline polyolefin resin and a crosslinked elastomer of an ethylene/alkyl acrylate copolymer. In addition, only the

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ethylene/methyl acrylate/monoethyl ester of maleic acid having 41% by weight of ethylene content is used by Wolfe, Jr. as taught at column 6, lines 9-11.

In the Examples of Wolfe, Jr. the compression set values are poor even though they are measured at temperatures as low as 70°C.

From the above, it is first submitted that the prior art relied upon by the Examiner does not teach applicants' claimed invention which requires that the acrylic elastomer composition comprises a butenedioic acid monoalkyl ester-copolymerized acrylic elastomer comprising at least one kind of alkyl acrylate and akoxymethyl acrylate unit, butenedioic acid monoalkyl ester unit and 0 - 30% by weight of vinyl or olefin monomer unit, and a cross-linking agent, wherein the acrylic elastomer contains 0.1-30% by mole of unreacted butenedioic acid monoalkyl ester on the basis of carboxyl groups copolymerized in the acrylic elastomer.

Moreover, the vulcanization and stability properties as demonstrated by good compression set characteristics which distinguish applicants' claimed invention over the prior art demonstrate that the prior art does not in any way appreciate or suggest or render obvious applicants' claimed invention.

That is, there is not teaching in the prior art to provide an acrylic elastomer composition that comprises a butenedioic acid monoalkyl ester-copolymerized acrylic elastomer comprising at least one kind of alkyl acrylate and akoxymethyl acrylate unit, butenedioic acid monoalkyl ester unit and 0 - 30% by weight of vinyl or olefin monomer unit, and a cross-linking agent, wherein the acrylic elastomer contains 0.1-30% by mole of unreacted butenedioic acid monoalkyl ester on the basis of carboxyl groups copolymerized in the acrylic elastomer.

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The improvement in compression set characteristics that are associated with applicants' claimed acrylic elastomer compositions are not recognized or appreciated in the prior art, and therefore not obvious over the prior art.

Applicants' claimed invention is not taught or suggested by the prior art and would easily be considered as providing properties that are unexpected from the teachings of the prior art.

Based upon the above distinctions between the prior art relied upon by the Examiner and the present invention, and the overall teachings of prior art, properly considered as a whole, it is respectfully submitted that the Examiner cannot rely upon the prior art as required under 35 U.S.C. §102 as anticipating applicants' claimed invention.

Moreover, the Examiner cannot properly rely upon the prior art under 35 U.S.C. §103 to establish a *prima facie* case of obviousness of applicants' claimed invention.

It is, therefore, submitted that any reliance upon prior art would be improper inasmuch as the prior art does not remotely anticipate, teach, suggest or render obvious the present invention.

It is submitted that the claims, as now amended, and the discussion contained herein clearly show that the claimed invention is novel and neither anticipated nor obvious over the teachings of the prior art and the outstanding rejections of the claims should hence be withdrawn.

Therefore, reconsideration and withdrawal of the outstanding rejection of the claims and an early allowance of the claims is believed to be in order.

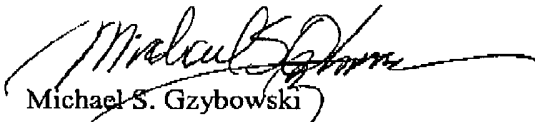
It is believed that the above represents a complete response to the Official Action and reconsideration is requested.

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If upon consideration of the above, the Examiner should feel that there remain outstanding issues in the present application that could be resolved, the Examiner is invited to contact applicants' patent counsel at the telephone number given below to discuss such issues.

To the extent necessary, a petition for an extension of time under 37 CFR §1.136 is hereby made. Please charge the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 12-2136 and please credit any excess fees to such deposit account.

Respectfully submitted,



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